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ABSTRACT

A group of 203 male students in a freshman chemistry class participated in this research, which investigated the relationship between performance attributions and expectations and performance on a subsequent task. College students attributed their success or failure on two chemistry tests to ability, effort, luck, or task difficulty, and indicated how well they expected to perform on a subsequent test. Among students who succeeded on the tests, expected and actual performance on the next test were positively related to ability attributions and negatively related to luck attributions. Among students who experienced failure, expected performance was negatively related to ability attributions and positively related to effort attributions. This suggests that failure can be a learning experience only when one feels that the behavior can be changed. Implications for job performance suggested that feedback may help the employee. (Author)

Causal Attributions, Expectations and Task Performance

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Running head: Causal Attributions

Causal Attributions, Expectations

and Task Performance

In a recent treatment of career development, Hall (1976) has proposed that goal attainment on a job can lead to feelings of psychological success which, in turn, raises self-esteem. Increments in self-esteem are presumed to lead to "...additional goal-directed behavior in that task area, often with an increased level of aspiration" (Hall, 1976, p. 125).

The linkage of goal attainment to psychological success to self-esteem to higher aspirations seems to reflect an assumption that success breeds success. If organizations can stimulate task success for its employees, high aspirations and further success may follow.

Whether success always breeds success is an interesting empirical question. Recent research suggests that people attribute their success or failure experiences to different causes, and these causal attributions may affect a person's orientation toward success or failure in the future. Attribution research (Frieze, 1973; Rosenbaum, 1972; Weiner, Frieze, Kukla, Reed, Rest and Rosenbaum, 1971) has found that people tend to attribute their success or failure on a task to one or more of the following four causes: ability, effort, task difficulty, and luck.

Weiner et al. (1971) have classified the causal attributions along two dimensions: locus of control and stability. The locus of control dimension reflects the distinction between internal (ability, effort) and external (task difficulty, luck) attributions. In addition, ability and task difficulty are generally

considered stable causes whereas effort and luck are viewed as relatively variable.

The purpose of the present study was to investigate several consequences of causal attributions in an applied setting. Hall's (1976) model suggests that task success should lead to high expectations of performance in the future. Attribution theory, on the other hand, proposes that the level of expected future performance depends on the particular causes to which the initial success was attributed.

Specifically, following a success experience, it is predicted (Hypothesis 1) that there is a positive relationship between attributions to stable causes and expected performance in the future. The rationale is that stable factors are perceived to continue into the future, thus making future success more certain. Success attributions to unstable causes, less certain to continue into the future, are expected to dampen the level of expected performance in the future.

Following a failure experience, on the other hand, it is predicted (Hypothesis 2) that there is a negative relationship between attributions to stable causes and expected future performance. Poor performance attributed to such unstable causes as lack of effort or bad luck presumably is viewed as easier to overcome than is poor performance attributed to the more stable causes. Although there is some evidence (McMahan, 1973; Rosenbaum, 1972) that the stability of attributions influences future expectations, the results have not been particularly strong and have been generally limited to laboratory settings.

If the stability of causal attributions influences expected performance, and if expectancies influence performance (Vroom, 1964), then attribution stability should be related to actual performance on a subsequent task. Thus, it is predicted (Hypothesis 3) that following success, there is a positive relationship between attributions to stable causes and future performance. Following failure (Hypothesis 4), there is a negative relationship between attributions to stable causes and future performance.

There are several characteristics of the present study that should be noted. First, unlike most of the previous work in attribution theory, the tasks involved in the present study (test-taking in college) are real, ongoing life activities. Although there are certainly differences between test-taking and job performance, there are important similarities as well. First, both activities have a strong evaluative component to them. Second, test grades and performance appraisals frequently have a quantitative basis to them with some reference to a "passing" or minimally-acceptible rating. Finally, both performance areas are likely to be of substantial significance to the persons involved.

A second feature of the present study was that the definition of task success and failure was not based on an arbitrary standard or an experimental manipulation but rather on the participants' own criterion of success. Finally, performance and attributions were assessed on two subsequent tests taken four weeks apart. This permitted a determination of whether attributions have similar effects as experience in a particular achievement situation increases over time.

Method

Sample

The sample was drawn from a population of 305 males in 12 sections of Freshman Chemistry at Stevens Institute of Technology. Females were excluded because attributional tendencies have been found to vary by sex (Deaux and Farris, 1974) and the number of females in the freshman class (45) was too small to test the hypotheses separately by sex. Of the 305 students in the population, 278 participated in the research. Missing data, however, reduced the sample size to 253 on the first test and 233 on the second test. Approximately 80% of the sample specialized in engineering and the remainder majored in science.

Research Instruments and Procedure

Students' performance and attributions were assessed on the first two tests of the semester. Two days before the first test, students were told that their test scores would be reported to them (for research purposes) in terms of five categories or levels of performance: I (top 15% of the class); II (next higher 25%); III (next 40%); IV (next 10%); and V (bottom 10%). These percentiles were used because they corresponded to the approximate percentages of A,B,C,D, and F grades given in the course in previous years. Students were instructed to indicate the lowest performance category in which they could score and still consider their performance to be a "success " (i.e., their minimum standard for success).

After students took the test, the second author obtained the raw scores from the instructors and converted the scores (from all 12 sections combined) into the five performance categories. During the week following the test, students were told their raw score, the performance category their score fell in, and were reminded of the minimum standard for success they had indicated two days before the test.

Those students whose performance equaled or exceeded their minimum standard for success were instructed to respond to the following statement: "My performance on the test was a success mainly because..." This statement was followed by six items each of which consisted of two success attributions (e.g., ___I tried hard..OR.. ___I was lucky). For each of the six items, the student checked the attribution that better explained his good performance on the test. Since each of the four attributions (ability, effort, luck, task difficulty) was paired with each of the other attributions, the score for each attribution was the number of times it was checked. This paired-comparison approach was used previously by McMahan (1973).

Those students whose performance on the test was lower than their previously-stated minimum standard were instructed to describe why their performance was "not a success" by responding to six pairs of failure attributions (e.g., __I was unlucky..OR.. __I didn't try hard). In addition to obtaining individual attribution scores (e.g., luck), scores on the stable dimension were generated by summing students' scores on the ability and task difficulty factors.

After students completed the relevant set of attribution items, they indicated how well they expected to perform on the second test by estimating the probability that their second test score would fall in each of the five performance categories. A total expected performance score was obtained by multiplying the subjective probability of scoring in each category by a constant weight assigned to each category (Category I=5 points; II=4; III=3; IV=2; V=1). If a person, for example, believed that the probabilities associated with each category were as follows- I=.5; II=.3; III=.2; IV=0; V=0- his expected performance score would be .5(5)+ .3(4)+ .2(3)+ 0(2)+ 0(1)= 4.3.

The procedure for collecting data relevant to the second test was identical to that of the first test. Two days before the second test, students indicated their minimum standard for success. One week after the second test, students received their scores, attributed their performance to the four factors, and indicated their expected performance on the third quiz.

Results

Table 1 presents the mean attribution and performance scores

Insert Table 1 about here

for the success and failure groups on the two tests. Note that on the first test, 176 of the 253 students equaled or exceeded their minimum standard for success. On the second test, 170 of the 233 students "succeeded."

For test 1, the most frequently-employed attribution for both success and failure was level of effort. The success and failure groups did differ in their use of task difficulty and luck as causal attributions. For test 2, ability and effort were

used significantly more as success attributions than as failure attributions, whereas task difficulty was used more as a failure attribution than as a success attribution.

Hypotheses 1 and 2 concerned the relationship between attributions and expected future performance. It was determined, however, that within the success and failure groups, raw score performance was significantly related to subsequent attributions and to expected future performance. Therefore, Hypotheses 1 and 2 were tested with partial correlations between attributions and expected future performance holding previous raw score performance constant. For test 1 data, the relevant correlations were between test 1 attributions and expected performance on test 2 holding test 1 performance constant. For test 2, the correlations were between test 2 attributions and expected performance on test 3 holding test 2 performance constant.

Table 2 presents the partial correlations between attributions

Insert Table 2 about here

and expected future performance. As predicted in Hypothesis 1, there was a positive correlation between success attributions to the stable dimension and expected performance. For both tests, ability attributions were positively related and luck attributions were negatively related to expected performance.

Following failure, attributions to the stable dimension were, as predicted (Hypothesis 2), negatively related to expected performance. Specifically, attributions to ability dampened expectations and attributions to lack of effort heightened expectations.

Table 3 presents the partial correlations between attributions and future performance. Once again, raw score performance was partialed out of the attribution-performance relationships. As predicted in Hypothesis 3, there was a positive relationship between success attributions to the stable dimension and future performance. Correlations involving ability (positive) and luck (negative) were most pronounced. Following failure, however, none of the attribution-performance relationships was significant.

Discussion

Following a success experience, attributions to stable causes were associated with higher expected and actual performance on a subsequent task. Specifically, expectations and performance were heightened by ability attributions and dampened by luck attributions. Hall (1976) clearly recognized that goal attainment does not automatically lead to higher aspirations and improved performance. In fact, Hall specified that in order for success to result in feelings of psychological success, the task environment must provide challenge, support, autonomy, and feedback.

To this list we may add the criterion of "appropriate" attributions. That is, goal attainment may be particularly likely to lead to high expectations and performance when employees attribute their success to ability and not merely to good luck. How can employees develop these attributions? It is possible that success attributions to ability will develop as employees engage in tasks that are challenging and autonomous and provide useful feedback.

It may be difficult, for example, for an employee to attribute success merely to good luck when he or she is working on a task

that is difficult, that calls for a variety of skills, that provides independence in selecting and working toward goals, and that provides descriptive, supportive feedback. It is speculated, in other words, that these task characteristics arouse success attributions to ability.

Following failure, expected (but not actual) performance is higher when the failure is attributed to lack of effort rather than lack of ability. Perhaps failure can only be a learning experience when one feels that his or her behavior can be changed. Thus, constructive, future-oriented, goal-related performance feedback may help the employee perceive that his or her failure on a task is due to an unstable cause that is capable of modification.

Two areas of research seem particularly worthy of attention. First, it is necessary to determine whether the attribution-criteria relationships obtained in the present study are applicable to the work setting. Second, if causal attributions regarding job performance do influence expected and actual performance, it would be important to know whether task characteristics (e.g., autonomy) are related to the type of attributions employed to explain performance.

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Table 1

Mean Performance and Attribution Scores for the Success and Failure Groups

Variable		Test 1		Test 2	
		Success (N=176)	Failure (N=77)	Success (N=170)	Failure (N=63)
Raw score performance	M	81.2	59.8**	67.4	43.5**
	SD	12.1	18.6	14.7	12.8
Ability attribution	M	1.3	1.1	1.4	1.0*
	SD	1.0	1.2	1.0	1.0
Effort attribution	M	2.1	1.9	2.4	1.4**
	SD	1.0	1.1	.8	1.2
Luck attribution	M	.8	1.8**	1.4	1.3
	SD	1.0	1.0	1.1	.9
Task difficulty attribution	M	1.9	1.3**	.9	2.2**
	SD	.9	.9	.9	.9

* Difference between success and failure groups significant at .05 level.

* Difference between success and failure groups significant at .01 level.

Table 2

Correlations Between Performance Attributions and Expected Future Performance

		Attributions				
		Effort	Luck	Ability	Task	Stable
Success	Test 1 data (N=176)	-.22**	-.25**	.40**	.06	.39**
	Test 2 data (N=169)	-.09	-.16*	.24**	.13*	.30**
Failure	Test 1 data (N=77)	.33**	.12	-.36**	-.04	-.38**
	Test 2 data (N=63)	.32**	.08	-.33**	-.20	-.39**

Note. Te t 1 data are partial correlations between test 1 attributions and expected performance on test 2 holding test 1 performance constant; test 2 data are partial correlations between test 2 attributions and expected performance on test 3 holding test 2 performance constant; stable dimension= ability + task.

* $p<.05$.

** $p<.01$.

Table 3

Correlations Between Performance Attributions and Subsequent Performance

		Attributions				
		Effort	Luck	Ability	Task	Stable
Success	Test 1 data (N=147)	-.07	-.20**	.22**	.03	.20**
	Test 2 data (N=165)	-.05	-.18**	.19**	.07	.21**
Failure	Test 1 data (N=61)	-.04	.08	-.07	.04	-.05
	Test 2 data (N=60)	-.09	-.12	.09	.15	.18

Note. Test 1 data are partial correlations between test 1 attributions and performance on test 2 holding test 1 performance constant; test 2 data are partial correlations between test 2 attributions and performance on test 3 holding test 2 performance constant.

* $p < .05$.

** $p < .01$.

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OUTCOMES	EXPECTATION	ON-THE-JOB	DIFFERENCE
Self respect	5.2	4.8	-.4
Prestige in company	4.2	3.8	-.4
Pay enough	4.8	4.2	-.6
Prestige from family & friends	5.0	5.1	+.1
Feel important	4.5	4.1	-.4
Secure future	4.8	6.5	-.3
Responsibility	4.3	4.2	-.1
Personal growth	5.1	4.7	-.4
Independence	5.0	4.7	-.3
Accomplishment	4.9	4.5	-.4
Participation in goals	4.5	3.9	-.6
Be informed	4.6	3.9	-.7
Close friendships	4.7	4.1	-.6
Lot of pressure	3.5	3.6	+.1
Lot of money	4.1	3.8	-.3
Opportunity to further education	5.1	4.9	-.2
Variety	4.8	4.2	-.6
Advance quickly	4.3	3.4	-.9

All [illegible] measured [illegible] point [illegible]
[illegible] and "1" as lowest.
Expectations measured before beginning job
On-the-job perceptions measured [illegible] on the job